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Sectio transversa foliaris, cellulae inanes in marginibus utrisque parum sed aequaliter arcuatae, intus in pariete ubique laevissimae; cellulae chlorophylliferae rectangulari-quadratae vel quadratae, perfecte in medio inter easdem inanes posita et eas omnino separantes, in marginibus utrisque planiusculae vel leniter rotundatae, conformiter parum incrassatae, lumine ejusdem formae et maximo.

Sphagnum macrophyllum, var. *Floridanum*, Aust., in BULLET. TORR. BOT. CLUB, vii., No. 2, p. 15 (1880). Rau & Hervey's Catal. N. Amer. Musci, p. 49 (1880)."

Hab. Florida. C. F. Austin; J. D. Smith.

Bethlehem, Pa. EUGENE A. RAU.

Notes on the Trees of the South-west.*—*Acer grandidentatum*, Nutt.—A few trees of this species, hardly large enough to be called trees, were observed in fruit in July, along streams in the Mogollon Mountains.

Canotia holacantha, Torr., grows sparingly upon hillsides in the San Francisco Mountains. Its wood appears to be useless except as fuel.

Quercus oblongifolia, Torr.—The shrubby form, doubtfully referred on p. 78 to *Q. pungens*, Liebm., belongs here, at least in part.

Populus balsamifera, L., var. *angustifolia*, is occasionally seen along the mountain streams in the higher altitudes.

Pinus edulis, Engelm.—Common throughout; seldom growing to be much more than a foot in diameter. Not observed on the highest mountains. I never found one with perfect seeds, and was informed that few trees ever produced them in the section where I collected.

Pinus ponderosa, Dougl.—This is the species from which most of the lumber used in the South-west is sawed. It contains a large amount of resin, and, for most purposes, is probably inferior to *Cupressus Arizonica*, E. L. G., but to no other here found. At an altitude of about 8,000 to 9,000 feet it is the predominant species, giving place above to *Pseudotsuga Douglasii*, Carr., and below to *Pinus edulis* and the *Juniperi*.

HENRY H. RUSBY.

Vincetoxicum nigrum, Moench., I find abundant here, between Highland Falls and the Point; more sparingly in Eagle Valley. I send this note, thinking the plant may not have been recorded.

West Point, N. Y., July 5th. W. W. BAILEY.

Botanical Notes.—*The Corona or Cup of the Narcissus.*—"What pages on pages have been written about this," says the editor of the *Gardeners' Chronicle* (Dr. Masters). "The fact is, it is a botanist's business to ask questions. When he sees a plant it is his business to interrogate it as best he can; so when he finds a flower presenting any peculiarity of structure like the cup of the *Narcissus*, it is his business, his duty and his pleasure to ask what it is, how it came there, what it means, and what is its use. The answer he gets to his questions depends very much indeed on the way the question is put.

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* Continued from page 80.

* * * In the case of the *Narcissus*-cup the answer to the question, what is it? has been sought in various directions, as by comparing the cup with similar conformations in other genera, such as *Pancratium*, or by observing the changes it sometimes exhibits when inclined to be 'sportive.' In *vino veritas*; so when a plant deviates from orthodoxy it very often lets out secrets not discernible at other times. Another mode has been by examining the mode of growth from the very earliest to the adult condition. Prof. Babington has kindly sent us a flower of *Narcissus poeticus* in which, to outward appearance, either one or two stamens have assumed the guise of the cup, or a portion of the cup has taken on itself the appearance of a stamen. Some years ago * * * the writer * * * ventured the opinion that the cup of the *Narcissus* consisted of a series of modified stamens. * * * There were grounds for this belief—there still are. Prof. Babington's flower might at first sight be cited in evidence along with others already recorded; but a more careful examination of the flower in question shows that, in this particular instance, it is not the corona reverting to a staminal appearance, but a dislocated and distinct stamen which is partially grown in union with the corona, and so looks as if it were a portion of the corona itself. The conclusions at which we arrived years ago were assailed by no less a person than Mr. Worthington G. Smith. On looking again at his arguments, after a lapse of years, it seems to us now that, while in matters of detail Mr. Smith was quite wrong, in matters of general principle he was quite right, in his interpretation of the mode of formation of the cup of the *Narcissus*. The ill-advised use of the word 'stipule,' and the false analogies thereupon based, concealed the underlying truth that the organ in question was and is an outgrowth from the flower-tube, and not necessarily either perianth-segment or stamen. In those days we relied upon one or two modes or styles of questioning when others were available, which would have shown, as they have done since, that the real interpretation of the corona of the *Narcissus* is that it is an outgrowth from the perianth-tube—an adaptation probably to facilitate cross-fertilization by insect agency. The cases formerly relied on to prove the staminal nature of the corona are capable of other interpretation, which it would be tedious to give here."

Local Floras.—Mr. Joseph Jackson, Jr., is contributing to the *Worcester Daily Spy* a series of lists of the plants of Worcester Co., Mass., each list including the names of 50 species, and the plants being recorded in the order of their flowering. It is the intention of the Worcester Natural History Society, we believe, to publish a complete flora of the county after sufficient material has been collected.

Mr. William C. Prime, in one of his recent "Lonesome Lake Papers" in the *New York Journal of Commerce*, has given a list of 83 plants (not including trees) found in flower in Franconia Valley (N. H.), and on the sides of the mountains, between May 20th and June 20th. Mr. Prime remarks: "Of course the list is not complete, but it will not be easy to add to it, for our researches were systematic and constant."

Dr. Charles Atwood, of Moravia, N. Y., notifies us by circular that he is gathering material with a view to publishing a flora of Cayuga County. The co-operation of local botanists is solicited.

Appalachia for June contains a few notes on the flora of the White Mountain region, and the statement is made that *Pinus Banksiana* has been detected on Welch Mountain (lat. 43° 55′ N., long. 71° 35′ W.)

The *Pharmacist* (Chicago) begins the publication, in the July number, of a catalogue of plants observed and collected by Dr. F. Brendel in the vicinity of Peoria, Ill., between 1852 and 1877. From a synopsis prefixed to Dr. Brendel's paper, we learn that the list will embrace the names of 874 species of Phaenogams and of 87 Cryptogams.

Botanical Literature.

Our Native Ferns and their Allies, with Synoptical Descriptions of the American Pteridophyta North of Mexico. By Lucien M. Underwood, Ph. D. 2d edition. Bloomington, Ill. 1882.

A little more than a year ago a neat and modest volume made its appearance under the title of "Our Native Ferns," which appears to have met with so much success that the author has disposed of his entire edition and now comes forward with a second, enlarged so as to include the entire *Pteridophyta* of the United States.

That portion devoted to the Ferns remains substantially the same as in the first edition, with only such changes and additions as were necessary to bring the work forward to date and make it complete—a fact which shows how much care the author bestowed upon his book in the first place, and guarantees the trustworthiness of the present edition ; but the addition of the remaining vascular cryptogams greatly increases the value of the book, and makes it doubly useful to all who seek to study this class of plants.

The author tells us in his preface that he has spared no pains to make his book thoroughly reliable (a fact of which the book itself furnishes sufficient evidence), and has therefore consulted freely the descriptive works of the highest authorities in order to ensure certainty in his descriptions.

There is no apparent disposition, however, to follow others, unless by so doing his own purposes may be the better carried out, but, on the contrary, the author shows much originality of thought, and independence of judgment in the treatment of his work throughout.

The elementary part is clear, and well calculated to introduce beginners to the study of the plants treated of. The excellent key makes the analysis of the ferns comparatively easy. Of the other plants it is enough to say that their treatment rests upon such authorities as Dr. Engelmann for the *Isoetes*, Spring for the *Lycopodiaceae*, and Milde for the *Equiseta*.

The writer can personally testify to the earnestness and fidelity with which the author has sought to make his work complete, and cordially commends the book to all.

It should be in the hands of all who are especially interested in the vascular Cryptogams of the United States.—G. E. D.